Claims

1. An isolated and purified DNA fragment, which is the gene cluster for the anthracycline biosynthetic pathway of the bacterium *Streptomyces galilaeus*, being included in a 7 kb *Xho*I-*Not*I fragment and a flanked 8.5 kb *Bgl*II fragment of *S. galilaeus* genome.

2. The DNA fragment according to claim 1, which comprises the nucleotide sequence given in SEQ ID NO:14, or a part thereof having similar characteristics, or a sequence showing at least 84 % homology to said sequence.

3. A recombinant DNA, which comprises the DNA fragment of claim 1 or 2, or a part thereof having similar characteristics, cloned in the plasmid replicating in *Streptomyces* or in *E. coli*.

4. The recombinant DNA according to claim 3, which is the plasmid pSgs4 deposited in *S. lividans* strain TK24/pSgs4 with the accession number DSM 12998.

5. The recombinant DNA according to claim 3, which is the plasmid pSgc5 deposited in *E. coli* strain XL1BlueMRF'/pSgc5 with the accession number DSM 12999.

6. Use of the genes derived from the DNA fragment of claim 1 or 2 in the production of anthracycline metabolites.

7. Use of the genes derived from the DNA fragment of claim 1 or 2 to increase aclacinomycin production.

8. Use according to claim 6 or 7, wherein the genes are encoding an activator, a dehydratase, an oxidoreductase, a dTDP-glucose 4,6-dehydratase, a glycosyl transferase, an isomerase, an aklaviketone reductase, a polyketide assembler, a cyclase, an aminomethylase, a glucose-1-phosphate thymidylyl transferase, and an aminotransferase.

9. A process for increasing aclacinomycin production in a bacterial host, comprising transferring the DNA fragment of claim 1 or 2 into a *Streptomyces* host, cultivating the recombinant strain obtained, and isolating the aclacinomycins produced.

10. The process according to claim 9, wherein the *Streptomyces* host is a *Streptomyces galilaeus* host.

11. The process according to claim 10, wherein the *Streptomyces galilaeus* host is a mutant strain derived from *S. galilaeus* ATCC 31615.

12. A process for producing metabolites, comprising transferring the DNA fragment of claim 1 or 2 into a *Streptomyces* host, cultivating the recombinant strain obtained, and isolating the compounds produced.

13. A process for producing anthracycline metabolites, comprising transferring the DNA fragment according to claim 1 or 2 into a *Streptomyces peucetius* host, cultivating the recombinant strain obtained, and isolating the compounds produced.